

45 SW 15E-3-14

(KCA 1308)

JOINT OPERATING PROCEDURE (JOP)
BETWEEN
45TH SPACE WING (45 SW)
AND THE
JOHN F. KENNEDY SPACE CENTER (JFKSC)
FOR
SAFETY

1 Jul 98

Supersedes JOP between 45 SW and JFKSC for Safety dated 7 May 95

**JOINT OPERATING PROCEDURE (JOP)
BETWEEN
45TH SPACE WING (45 SW)
AND THE
JOHN F. KENNEDY SPACE CENTER (JFKSC)
FOR SAFETY**

- I. PURPOSE.** This document establishes the relationship between 45 SW and JFKSC for safety support.
- II. AUTHORITY/GOVERNING DIRECTIVE.** This JOP is an official implementing document to the Joint Operating and Support Agreement (JOSA) between 45 SW and JFKSC (45 SW 15E-2-2).
- III. SCOPE AND APPLICABILITY.**
- A. This document applies to 45 SW and JFKSC and shall be enforced by these agencies to ensure compliance by attached units and contractors under their respective management.
- B. Other Related Agreements
1. JOSA between 45 SW and JFKSC, 13 Jan 97 (45 SW 15E-2-2).
 2. MOU between 45 SW and JFKSC for Missile/Space Vehicle Safety on JFKSC and ER, 2 Nov 95 (45 SW 15E-2-8).
 3. MOU between NASA and the Department of Defense (DOD) in Joint Investigation of Aircraft and Space System Mishaps, 12 Nov 82.
 4. Implementation Procedure for Space Transportation Systems (STS) Payloads System Safety Requirements, NSTS 138308, 16 Nov 89.
 5. Payload Ground Safety Handbook, Kennedy Handbook 1700.7B, 1 Sep 92 (45 SW HB S-100).
 6. NASA/AF Memorandum of Agreement on Reimbursements of Launch and Associated Services for Uses of the Space Shuttle, 1 Feb 83, as amended.
 7. JFKSC/45 SW JOPs. Because of the large number of JOPs, a listing is not included herein. A listing of JOPs is included in the 45 SW composite list of Agreements and JOPs, published semiannually.
 8. Eastern and Western Range (EWR) Safety Requirements 127-1.
 9. NASA Safety Subworking Group Charter dated 1 Jun 94.

IV. GENERAL CONCEPT.

- A. The Commander, 45 SW, is the DOD executive agent and single manager of the Eastern Range (ER) and will establish policies and procedures for the operation of that installation. 45 SW's mission is to develop, operate, and manage range facilities and, as host agency, provide general support services to all test/user activities at the ER. The 45 SW is also the principal AF focal point for relationships with NASA/JFKSC.
- B. The Director, JFKSC, is the NASA executive agent and single manager of JFKSC and will establish policies and procedures for the operation of that installation. JFKSC's mission, in part, is to develop, operate, and manage the facilities for preparation and launch of NASA space vehicles and to conduct the associated launch operations. In addition, as host agency, JFKSC is responsible for providing general support services to all test/user activities at JFKSC. JFKSC is also the principal NASA focal point for relationships with 45 SW.
- C. Management Relationships, Interfaces, and Authority
 1. 45 SW and JFKSC respectively maintain the primary interface for arranging launch and flight support to missions and tests originating at the ER and JFKSC. It is the policy of 45 SW and JFKSC to ensure a maximum of mutual assistance and to avoid duplication to the fullest extent possible. To this end, each will keep the other informed of its plans and requirements and will consult with each other fully regarding its activities. The NASA Safety Subworking Group was established to meet that need (see reference III.B.9). This group uses a team approach among NASA and Air Force along with their respective contractors for identifying, prioritizing and resolving safety issues associated with the design, operation, and launch processing of the expendable and Space Shuttle Programs.
 2. This document will complement each of the references cited in paragraph III.B. of this JOP and, in the event of conflicts between the JOP and the references, the resolution will favor the references.

V. RESPONSIBILITIES.

- A. 45 SW is responsible for the following
 1. Overall safety on the ER.
 - a. Developing policy and plans for implementing the safety program on the ER, which will include provisions for:
 - (1) Ensuring that all applicable public laws, DOD, AFSPC, SMC, and AF directives, regulations, manuals, and policies concerning safety are complied with on the ER. Ensuring that AF personnel and contractors on AF programs on JFKSC are in compliance with applicable public laws, AF regulations, and NASA directives.
 - (2) Monitoring the safety programs of contractors and range users on the ER to ensure compliance with safety requirements and, on JFKSC, monitoring the safety programs of AF personnel and contractors to the extent necessary to ensure compliance with AF and NASA safety requirements.

- (3) Monitoring the design and including 45 SW system safety requirements in all systems and facilities to be used on the ER. 45 SW/SES will provide systems safety engineering support to the NASA/STS safety program under references III.B.1, -.4, and -.5, of this JOP.
 - (4) Review and safety approval of NASA hazardous procedures will be accomplished in accordance with Appendix A; while 45 OG will coordinate and accept all AF nonhazardous procedures used on JFKSC.
 - (5) Developing procedures and regulations governing access to controlled areas resulting from operational safety requirements on the ER.
 - (6) 45 SW/SES will initiate accident/incident/mishap investigations for CCAS areas and facilities for which the ER has real property accountability. 45 SW/SES will initiate investigations involving AF property and/or injuries to AF personnel and AF contractors on JFKSC and CCAS facilities for which 45 SW has real property accountability. JFKSC/EI will assist 45 SW/SES as requested.
 - (7) Providing launch emergency response forces for missile/space vehicle impacts according to reference III.B.2.
 - (8) Industrial Safety
 - (a) Providing a safe work environment for JFKSC activities taking place within 45 SW real property accountable facilities (i.e., protect against unsafe conditions).
 - (b) Ensuring that AF personnel and contractors operating within JFKSC are given proper supervision and/or training so that good industrial safety practices are adhered to at all times, to include those periods when their activities are not being conducted using a JFKSC safety approved Technical Operating Procedure (TOP), and no JFKSC safety coverage is provided (i.e., protect against unsafe acts).
 - b. Performing those activities required to implement the preceding items to ensure compliance with the safety program.
2. Missile/space vehicle flight safety.
- a. Developing and implementing missile/space vehicle flight safety program, including review and approval of all flight termination systems and development of defect criteria and ER mission rules. This also includes control of all ER contract vehicle flights.
 - b. Monitoring those operations on JFKSC and the ER necessary to ensure compliance with the missile/space vehicle flight safety program. This includes manning SES, BLAST, and LCC RSR consoles during shuttle launches.
- B. JFKSC is responsible for the following
1. Overall safety on JFKSC, excluding missile/space vehicle flight safety.
 - a. Developing policy and plans for implementing the safety program on JFKSC, which will include provisions for:

- (1) Ensuring that all applicable public laws, NASA directives, regulations, manuals, and policies concerning safety are complied with on JFKSC. Ensuring that its employees and contractors performing on NASA real property accountable facilities on the ER are in compliance with applicable public laws, AF regulations, and NASA directives.
- (2) Review and safety approval of AF hazardous procedures used on JFKSC will be accomplished in accordance with Appendix A.
- (3) Monitoring the safety programs of contractors on JFKSC to ensure compliance with safety requirements and, on the ER, monitoring the safety program of its contractors to the extent necessary to ensure compliance with NASA and AF safety requirements.
- (4) Monitoring the design and including JFKSC system safety requirements in all systems and facilities to be used on JFKSC and JFKSC facilities located on CCAS.
- (5) Developing procedures and regulations governing access to controlled areas resulting from operational safety requirements on JFKSC.
- (6) JFKSC/EI will initiate accident/incident/mishap investigations for CCAS areas and facilities for which JFKSC has real property accountability. JFKSC/EI will initiate investigations involving JFKSC property and/or injuries to JFKSC personnel and JFKSC contractors on JFKSC and CCAS facilities for which JFKSC has real property accountability. 45 SW/SES will assist JFKSC/EI as requested.
- (7) Providing launch emergency response forces for missile/space vehicle impacts according to reference III.B.2.
- (8) Industrial Safety
 - (a) Providing a safe work environment for 45 SW sponsored activities taking place within JFKSC real property accountable facilities (i.e., protect against unsafe conditions).
 - (b) Ensuring that NASA-sponsored personnel operating within 45 SW facilities are given proper supervision and/or training so that good industrial safety practices are adhered to at all times, to include those periods when their activities are not being conducted using a 45 SW safety approved TOP, and no 45 SW safety coverage is provided (i.e., protect against unsafe acts).
- b. Performing those activities required to implement the preceding items to ensure compliance with the safety program.

C. Joint responsibilities

1. The JFKSC Director of Safety Assurance (JFKSC/EI) and the 45 SW Safety Office (45 SW/SE) will:

- a. Inform each other of their plans and requirements that in any way affect interrelated safety matters. Submit information copies of all hazardous procedures intended to be

used within their respective facilities, located in the other's area (e.g., NASA facilities at CCAS or AF facilities at JFKSC).

- b. The 45 SW will be responsible for safety arrangements in connection with DOD visitors, including necessary arrangements and coordination with JFKSC. JFKSC will be responsible for safety arrangements in connection with NASA visitors, including necessary arrangements or coordination with 45 SW. 45 SW and JFKSC will be jointly responsible for safety arrangements in connection with joint visitors to the ER or JFKSC.
- c. Define to the other safety office safety support requirements peculiar or unique to particular programs or operations. These will normally be identified through review and coordination of Operational Safety plans or safety operating procedures. One-time requirements will be handled on an individual basis between the supporting and requesting office. The requesting agency is responsible for justifying additional funding.
- d. Investigate accidents occurring on the ER and on JFKSC under reference III.B.3.

D. Multiple User Facilities or Complexes

- 1. A limited number of facilities or launch complexes may be used by more than one user (i.e., NASA and AF) simultaneously. When a facility has multiple users the following guidelines apply
 - a. The overall safety responsibility will rest with the 45 SW Commander for areas on the ER and with the Director of JFKSC for areas on JFKSC. The lead agency (45 SW/SE or JFKSC/EI) for investigation of property damage and/or personnel injuries in joint-use facilities/areas will be the agency whose personnel or contractor is conducting the operations. The other agency will assist in the joint investigation. For joint investigations not conducted under reference III.B.3 the directives/regulations of the lead agency will apply. This does not relieve the assisting agency from reports peculiar to their respective directives and regulations.
 - b. After a property damage and/or personnel injury in joint-use facilities, NASA and the AF will develop a joint agreement defining the points of contact with the responsible overall safety manager (JFKSC or 45 SW) and outlining the responsibilities for meeting either JFKSC's or 45 SW's safety requirement, whichever is applicable under paragraph V.D.1.a.
 - c. 45 SW and JFKSC safety offices will develop those agreements in specific areas and for specific operational functions necessary to cover individual situations.

VI. ORGANIZATIONAL ELEMENTS AFFECTED. The principal organizations affected by this JOP are: JFKSC (JFKSC/EI), the Lyndon B. Johnson Space Center Payload Safety Office (NS-2), and 45 SW/SE.

VII. REVIEW. This JOP will be reviewed at least triennially, and necessary addenda will be made to keep it up to date.

VIII. REVISION. Revisions will be made as required and will be coordinated with all other interested organizations. Each addendum page will be marked to identify the revised paragraphs or wording and dated to positively identify each page. This document may be changed at any time by joint agreement of the signatory agencies.

IX. TERMINATION. This JOP may be canceled by mutual written consent of the signatory agencies. The Office of Primary Responsibility (OPR) will immediately notify all affected organizations when the JOP is terminated.

APPENDIX A

PROCEDURE REVIEW AND APPROVAL PROCESS

I. PURPOSE.

This Appendix defines the agreement between the 45th Space Wing (45 SW) Wing Safety Office (SE) and the John F. Kennedy Space Center (JFKSC) Safety Assurance Directorate (EI) for Category I and Category II procedure review and approval.

II. SCOPE.

This agreement includes all new hazardous operating procedures and changes or revisions to hazardous procedures which are used on the Eastern Range (ER), on Cape Canaveral Air Station (CCAS), in facilities of the JFKSC in which Air Force personnel and contractors conduct operations, and operations affecting the Shuttle Range Safety System (SRSS). Category I procedure review encompasses normal operating procedures. It is understood that operating procedures cannot address all situations that could arise during normal operations. Additionally, this agreement defines how to deal with Category II and real time procedure review and approval.

III. EXPLANATION OF TERMS.

- A. **Category I.** Category I Technical Operating Procedures (TOPs) are those operating instructions that provide detailed steps for the operation, maintenance, and verification of ground support systems and equipment, and instructions for the assembly and disassembly, checkout, servicing, verification, handling, and transportation of the space vehicle, and components including payload systems, subsystems, and experiments during prelaunch, launch, and postlaunch operations. Repetitive hazardous and nonhazardous operations use Category I TOPs.
- B. **Category II.** Category II TOPs provide engineering instructions, authorize work, establish work control methods, and are normally prepared for a one-time-only nonhazardous operation in order to accommodate special tests or authorized temporary installations, removals, or replacements. A Category II TOP may also be used for one-time-only hazardous operations and for repetitive nonhazardous operations when work is of limited scope and does not economically justify preparation of a Category I TOP. Category II procedures shall not be used to change or replace Category I TOPs.

IV. PROCEDURE APPROVAL.


A. Category I Procedure Review Process

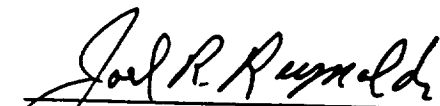
- 1. **Air Force (AF) procedure review.** JFKSC shall provide expeditious review and final safety approval or disposition of all new AF hazardous procedures and changes or revisions to previously approved procedures to be used on JFKSC.
 - a. The NASA/Air Force Safety High Performance Team will prioritize and determine a reasonable review period for procedures, normally between 10 and 30 days.

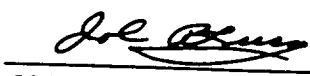
- b. Review of changes or revisions is required any time the type of hazard changes, the level of the hazard increases, or a change to an operational step or sequence increases the hazard or changes existing safety requirements.
 - c. Where no change to the hazard level is involved in the procedure change or revision, the 45th Operations Group (45 OG) will accept the procedure for use and submit the change or revision to JFKSC and 45 SW/SES. Two copies must be provided to JFKSC Safety (JFKSC/EI) for use in required safety monitoring. A transmittal letter must indicate that no change in hazard potential is involved, and that the changes or revisions have been accepted by 45 SW/SES under this paragraph of the JOP.
 - 2. NASA procedure review. 45 SW/SES is responsible for expeditious review and final safety approval or disposition of all new NASA hazardous (as defined in EWR 127-1) procedures and changes or revisions to previously approved procedures used on the ER, on CCAS facilities for which JFKSC has real property accountability, in JFKSC facilities where AF personnel conduct operations, and operations affecting the Shuttle Range Safety System (SRSS).
 - a. The NASA/AF Safety High Performance Team will prioritize and determine a reasonable review period for procedures, normally between 10 and 30 days.
 - b. Review of changes or revisions is required any time the type of hazard changes, the level of the hazard increases, or a change to an operational step or sequence increases the hazard or changes existing safety requirements.
 - c. Where no changes to the hazard level is involved in the procedure change or revision, JFKSC will approve the procedure for use and submit the change or revision to 45 SW/SES. One copy must be provided to Operational Safety (JCWS) for use in required safety monitoring. A transmittal letter must indicate that no change in hazard potential is involved, and that the changes or revisions have been approved by JFKSC under this paragraph of the JOP.
 - d. 45 SW/SESL will provide a list of safety procedures which require SESL review and approval to JFKSC. Review of this list will be concurrent with the scheduled review of this JOP.
- B. Category II and Real Time Procedure Review Process. When the need arises**
- 1. The Test Conductor or Engineer in charge will contact Operational Safety and will
 - a. Describe the situation.
 - b. Describe any suggested work arounds.
 - c. Describe the impact on the procedural hazard level (i.e., increased, decreased, no change).
 - d. Describe safety precautions to be employed.
 - e. Prepare written documentation.

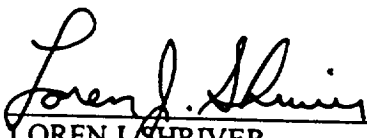
2. Operational Safety will evaluate the request based on the information provided above and will take one of the following actions
 - a. Approve the request with signature authority to sign the Work Authorization Documentation (WAD).
 - b. Suggest an alternate method that would enhance safety.
 - c. Refer to 45 SW/SES with reasons for inaction.
 - d. Recommend normal scheduling and compliance with approved procedures.

JOP BETWEEN 45 SW AND JFKSC FOR SAFETY


 JOHN P. LUCAS, Colonel, USAF
 Chief, Wing Safety
 45th Space Wing
 26 May 98
 DATE


 JOEL R. REYNOLDS
 Director, Safety Assurance
 Kennedy Space Center
 6/19/98
 DATE


 JOHN P. LUCAS, Colonel, USAF
 45 SW/JFKSC Joint Policy Group
 1 July 98
 DATE


 LOREN J. SHRIVER
 45 SW/JFKSC Joint Policy Group
 6-20-98
 DATE

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